MODEL H8070
HEIRLOOM TELECASTER-STYLE GUITAR KIT
OWNER'S MANUAL

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#BL8552 PRINTED IN KOREA

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table of Contents

SECTION 1: SAFETY

⚠WARNING

Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).

Because there are various ways to cut and join wood, you can make substitutions for the methods stated in this plan. We try to suggest the easiest methods possible. However, only you know your skills with each piece of machinery. Never compromise your safety by using a cutting method with which you are not comfortable. Instead, find an alternative approach that will yield the same result.

⚠WARNING

These instructions assume that you are intimately familiar with the safe operation and use of woodworking machinery and woodworking tools, and understand the techniques used to build this project. If you do not qualify for both of these criteria, **STOP building this project for your own safety.** Read and understand the owners manual for the machinery you intend to use, take a woodworking class or visit your local library for more information. Woodworking machinery and tools are inherently dangerous because they use sharp edges that can and will cause serious personal injury including amputation and death. Do not underestimate the ability of these tools and machinery to cause injury. Never operate any tool without all guards in place and always wear approved safety glasses. For your own safety, please heed this warning.

SECTION 2: INTRODUCTION

Foreword

We are proud to offer the Model H8070 Heirloom Telecaster-Style Guitar Kit. This kit is a part of a growing Grizzly family of fine woodworking products. When assembled according to the guidelines set forth in this manual, you can expect years of enjoyment from your guitar.

We are pleased to provide this manual for the Model H8070. It was written to guide you through assembly, review safety considerations, and cover general information. It represents our effort to produce the best documentation possible.

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Contact Info

If you have any comments regarding this manual, please write to us at the address below:

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We stand behind our products. If you have any service questions or parts requests, please call or write us at the location listed below.

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SECTION 3: PARTS INVENTORY

Inventory

REF	PART#	DESCRIPTION	QTY
1	PH8070001	Guitar Body	1
2	PH8070002	Neck	1
3	PH8070003	Pick Guard	1
4	PH8070004	Neckplate	1
5	PH8070005	Tuning Machine	6
6	PH8070006	Control Plate	1
7	PH8070007	Bridge	1
8	PH8070008	Pickup	1
9	PH8070009	Plastic Bushing	6
10	PH8070010	Output Jack Cover	1
11	PH8070011	Output Jack	1
12	PH8070012	String	6
13	PH8070013	Strap Button	2
14	PH8070014	Chrome Screw 5 x 45mm	4
15	PH8070015	Chrome Screw 3.5 x 25mm	8
16	PH8070016	Chrome Screw 3.1 x 12mm	12
17	PH8070017	Chrome Screw 2.1 x 12mm	8
18	PH8070018	Chrome Screw 2.5 x 16mm	2
19	PH8070019	Chrome Screw 2.5 x 14mm	2
20	PH8070020	Round String Retainer	2
21	PH8070021	String Nut	1
22	PH8070022	Ferrule	6
23	PAW04M	Hex Wrench 4mm	1
24	PAW01.5M	Hex Wrench 1.5mm	1

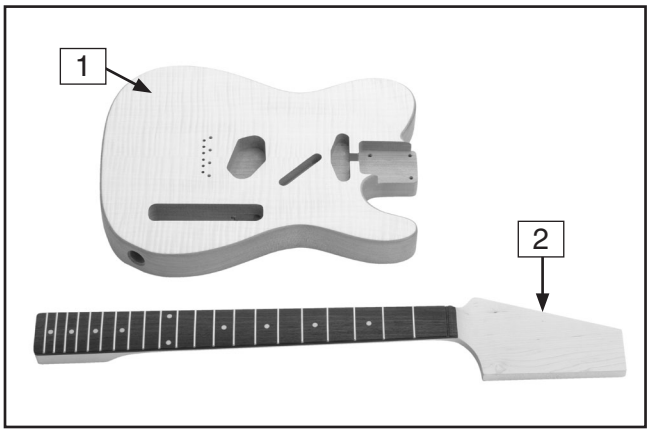


Figure 1. Boxed components.

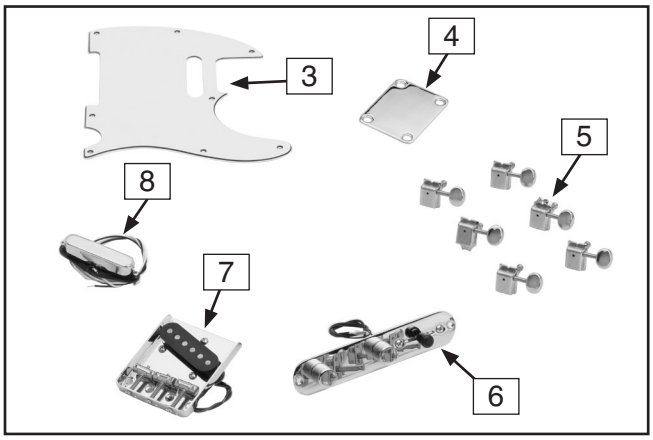


Figure 2. Guitar parts.

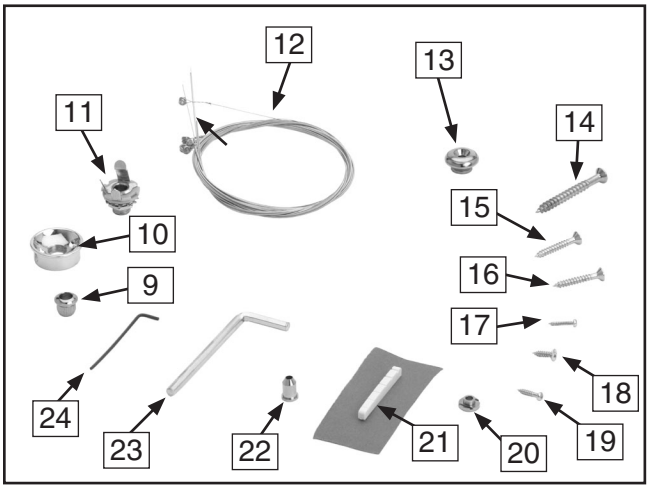


Figure 3. More guitar parts.

Supplies/Tools

Most wood components in this kit are fully machined at the factory and are ready for assembly. A small amount of sanding and finishing is needed to complete your guitar.

Recommended Tools & Supplies:

- Sharp Pencil
- Drill Press
- Drill Bits: 1/16", 3/32", 5/32", 5/16", 11/32", 1/4"
- Electric/Cordless Drill
- Depth Stop
- NIOSH Approved Respirator
- ANSI Approved Safety Glasses
- Aluminum-Oxide Sanding Paper #150, #220 and #320 Grit
- Wet and Dry Sanding Paper #400, #600, and #1000 Grit
- Flexible Sanding Block
- Wood Glue
- Chisel or Razor Blade
- Phillips Screwdriver #1, #2
- 1/4" Steel Rod or a Coat Hanger
- Masking Tape
- Tack Cloth
- Bandsaw with 1/4" Blade or Coping Saw
- Tack Cloth or Soft Cloth
- Sanding Sealer
- Assorted Wood Files
- Buffing Compounds
- Oil Wood Finish
- Soldering Iron and Solder
- Peghead Reamer or a Round File
- Rubber Dead Blow Hammer
- Tweezers, Pliers, Wire Cutters
- C-Clamps
- Temporary Wood Handle: Approximately 1" x 2" x 16"
- Guitar Capo
- Feeler Gauge Set
- Spray Primer and Finish (See Note Below)
- 18" Metal Straightedge (1/32" Resolution)
- 36" Metal Straightedge
- Steel Ruler (1/64" Resolution)
- Wood Dowel
- Wood Blocks: 4" x 4" x 12" (2)
- Wood Shim: 7/16" Thick

Note: *Use the same type of paint for primer and finish—either enamel or lacquer base. Do not use different base paints for priming or finishing or your results may not be desirable.*

Identification

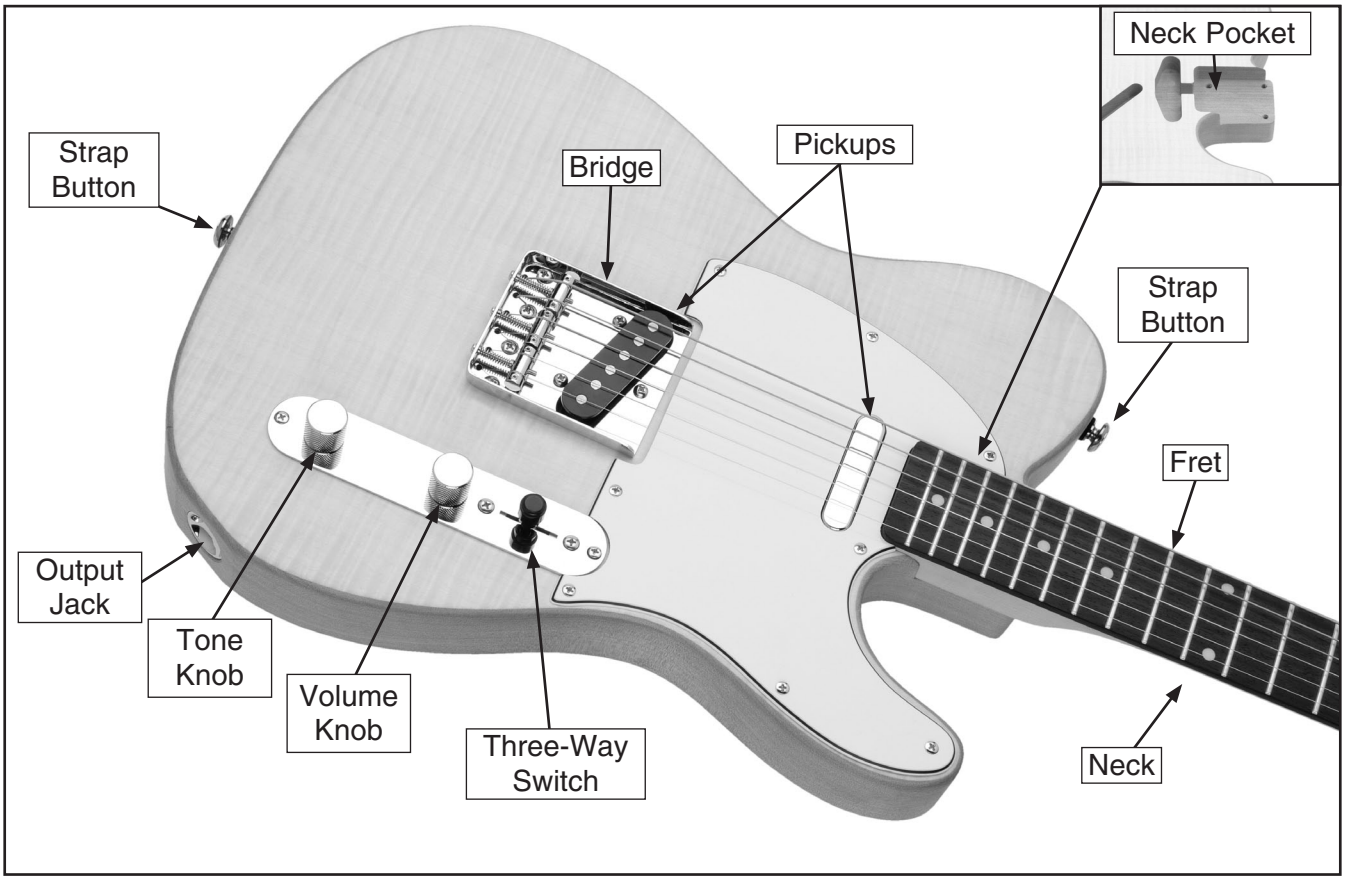


Figure 4. Model H8070 controls.

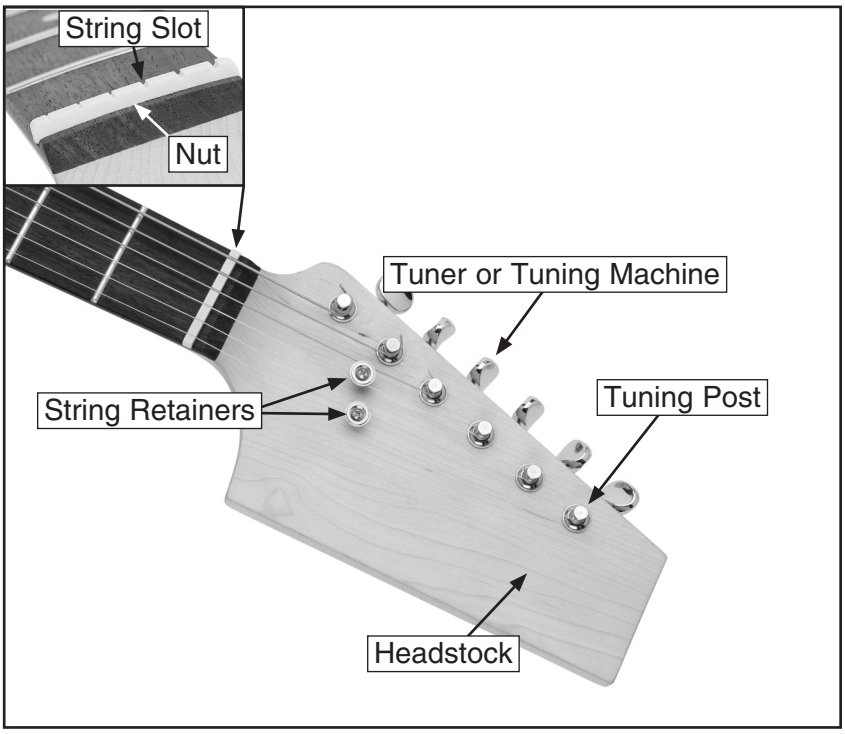


Figure 5. Model H8070 headstock features.

SECTION 4: ASSEMBLY

Shaping Headstock

The headstock for these models comes unfinished so you can cut it to your own design. These instructions will guide you through designing the shape of the headstock and placing pegholes.

Components Needed **Qty**
Guitar Neck 1

Tools Needed
Sharp Pencil 1
Paper .....Varioius
Bandsaw with a ¼" Blade or a Coping Saw 1
Woodworking Files..... Assorted
Drill Press with ¼" and 11⁄32" Drill Bits.....1

To shape the headstock:

1. Trace the headstock on a piece of paper. Test various ideas for headstock shapes on paper before cutting into the headstock.

2. Layout pegholes for the tuners. Space the centers of the pegholes exactly 30⁄32" apart, and a minimum of ½" from the edge of the headstock.

3. Draw the path of the strings onto the test paper to ensure that the strings do not interfere with each other as shown in **Figure 6**.

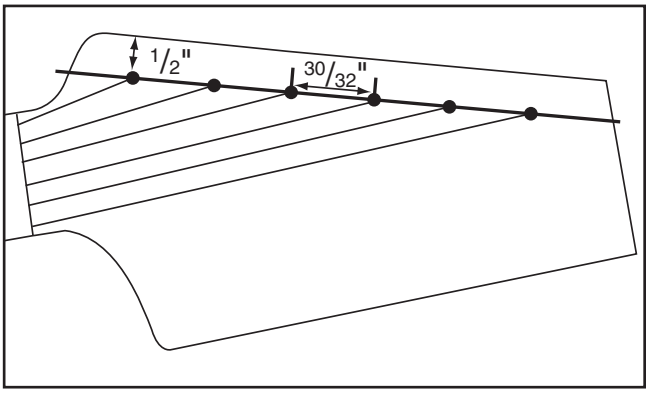


Figure 6. String paths and peghole locations.

Note: *To determine the string slot (**Figure 5**) locations, you can place the nut on the drawing and mark the slots. If the strings cross the nut at a sharp angle, this increases friction and makes tuning difficult. It also increases the risk of the strings pulling out of the nut slots.*

4. Layout the tuners on the test paper to ensure they are stacked tightly against each other. (See **Page 14** for instructions on installing the tuners.)

5. Redraw your final headstock shape onto the headstock with a pencil.

6. Cut the headstock out with a bandsaw or coping saw. Be sure to cut only to the outside edge of your pencil line.

Note: *To cut sharp corners, cut several slots perpendicular to the corner, then cut out the small pieces. This will reduce binding on the blade.*

7. Carefully hand file the headstock to finalize the shape.

8. Mark the pegholes onto the headstock.

9. Using a ¼" bit, drill a hole through the top of the headstock for a tuner shaft, then center an 11⁄32" bit over the same hole and drill down 9⁄32" for the bushing as shown in **Figure 7**.

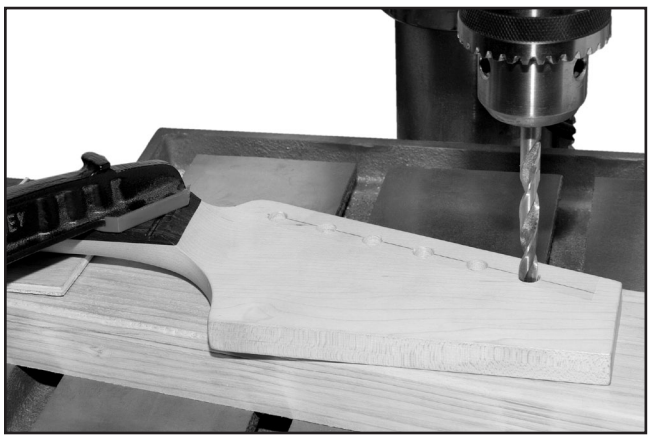


Figure 7. Drilling the pegholes.

10. Place the tuners into the holes on the back of the headstock to check their position. The ends of the tuners should touch each other.

—If tuners overlap, carefully widen the shaft of the overlapping tuner and adjust its position relative to each of the other tuners.

Sanding Body

The guitar body has been sanded at the factory, but it is up to you to do the final sanding before the finish is applied. To get a good finish, the body should be sanded with a series of sandpaper grits up to #320 grit.

Components and Hardware Needed: Qty
Guitar Body 1

To sand the guitar body:

1. Wear a NIOSH-approved respirator and ANSI-approved safety glasses when sanding wood!

2. Use a flexible sanding block with #150 grit aluminum-oxide sanding paper to sand the guitar body until there is a consistent scratch pattern on the entire surface.

Note: *DO NOT round over the neck pocket or the body cavities.*

When hand sanding, always sand in the same direction as the wood grain.

3. Resand the entire guitar body with #220 grit sanding paper and lightly round over the outside edges of the body.

4. Wipe the guitar body with a damp cloth to “raise” the wood grain.

5. Wait until the wood is dry and resand the entire body with #220 grit sandpaper to sand the “raised” grain smooth.

6. Repeat **Step 4 & 5.**

Note: *If you want to stain your guitar, the stain should be applied now before continuing with the next step. Stains cannot be applied to the guitar body after the sanding sealer is applied.*

7. Apply a primer if you plan to paint the guitar a solid color. Apply a coat of sanding sealer if you stained the guitar. Use the sealer or primer according to the manufacturer's instructions.

Note: *Make sure the primer or sealer you use is compatible with your finish.*

8. When the sanding sealer or primer is dry, use #320 grit sandpaper for final sanding. DO NOT sand through to bare wood.

Sanding Neck

Like the guitar body, the guitar neck has been rough sanded at the factory. Final sanding should be done as described in the previous sub-section **Sanding Body**. Consider applying inlays or additional design work on the fretboard and headstock before final sanding.

Note: *If you are considering inlays or other design work, take time to test your designs in scrap wood before performing the work on the instrument.*

The fretboard requires no sanding. Sanding the fretboard will affect the playability of the guitar and could lead to irrepairable damage.

Finishing Neck

Some of the finishing options include stains, lacquers, varnishes and oil finishes. Traditionally, this style of guitar has a clear finish on the neck. Depending on the type, finishes can be applied with a spray gun, brush, rag, or a spray can. Finish materials and books on finishing instruments can be ordered through Grizzly Industrial or numerous luthier supply catalogs.

Components and Hardware Needed: **Qty**
Guitar Neck 1

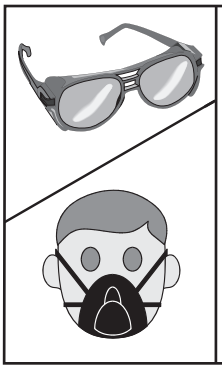
To finish the guitar neck:

1. Mask off the surface of the fretboard. Carefully press all the masking tape edges securely to the fretboard. The finish coat can seep under these edges, especially near corners, uneven edges, and places where the frets meet the fingerboard.

2. Make an "S" shaped hook out of 1/4" steel rod or a coat hanger that has been folded in half.

3. Wipe the entire neck with a tack cloth to remove any dust.

4. Thread the hook through the upper peghole and hang the neck in the finishing room.



⚠WARNING

Most finishes are hazardous to your health. Wear a NIOSH/OSHA approved respirator with particulate and gas/vapor filters, safety glasses, rubber gloves, and work in a well ventilated area when finishing.

5. Apply the finish according to **Finishing Body**, **Steps 5–10,** on **Page 10**.

6. Before wet sanding, remove the masking tape from the fretboard and carefully scrape any excess finish off the fretboard with a razor blade or chisel held perpendicular to the surface, as shown in **Figure 8**.

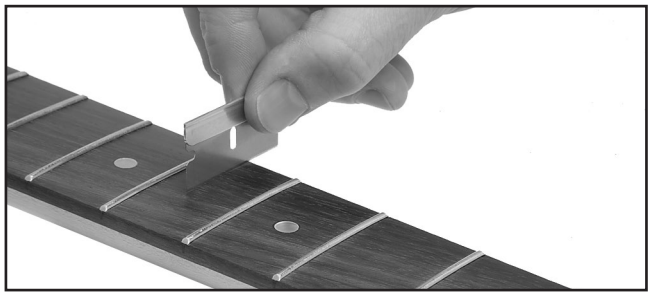


Figure 8. Scraping the fretboard.

7. Let wood dry naturally and completely.

8. Use a clean rag to wipe wood finishing oil on the dryed surface of the fretboard.

Finishing Body

This guitar looks incredible with a clear finish that highlights the wood grain patterns. The surface can be stained prior to finishing or a transparent pigment can be added to the finish. These instructions guide you through a very basic finishing process. Books describing different guitar finishing techniques are available through luthier supply catalogs, or through your local library. Clear finish materials and books on finishing can be ordered through Grizzly Industrial. Finishing a guitar is a difficult task. If you are unsure of your skills; do your research, practice on scrap wood, or take it to a professional.

Components and Hardware Needed: **Qty**
Guitar Body 1

To finish the guitar body:

1. Mask off the neck pocket (**Figure 4**). Press the masking tape tight against the edges of the pocket so the finish does not seep under the tape.

2. Screw through the neck pocket screw holes into a long piece of wood to use for a handle during spraying. Drill a hole in the end of the handle for hanging from a hook.

3. Wipe the entire guitar body with a tack cloth to remove all dust.

4. Thread the hook through the temporary handle and hang the body in the finish room.

5. Apply several thin coats of the finish, following the manufacturer's instructions. Multiple thin coats usually produce a better quality finish than one heavy coat.

6. Sand the entire body with #400 grit wet and dry sandpaper after at least three coats of finish have been applied. DO NOT sand through the finish—be careful on the edges.

7. Apply more finish, sanding between coats, until the finish is the desired thickness.

   Note: *If finishing with a solid color, you may wish to apply several coats of a clear finish over the top, sanding between coats, to add depth to the finish.*

8. When the final coat has dried at least a week, preferably a month, remove the temporary handle and masking.

9. Wet sand the finish using #600 grit wet and dry sandpaper using a sanding block, followed with #1000 grit wet and dry sandpaper.

10. Buff the finish by hand or with a buffer, starting with a medium polish and work up to a high gloss polish.

    Note: *If using a buffing machine, be careful to avoid going through the finish, especially on the edges.*

NOTICE

Dust particles suspended in the air will settle on wet finishes, causing less than satisfactory results. To avoid this problem:

- **Leave the finishing room undisturbed for 24 hours prior to applying the finish.**
- **Avoid making unnecessary movements when entering the finish room.**
- **Apply the finish to the desired guitar parts and immediately leave the finish room.**
- **DO NOT return to the room until the specified drying time has elapsed.**

Mounting Neck

Components and Hardware Needed: **Qty**

Guitar Body 1
Neck 1
Silver Neckplate 1
Chrome Screws 5 x 45mm 4

Unless otherwise indicated, we strongly recommend using a drill press for the majority of drilling to obtain the most precise results. However, an electric/cordless drill fitted with a depth stop or a drill stand can be used if you do not have a drill press.

We recommend using a hollow punch (see **Page 24, Accessories**) to carve out holes in the finish before drilling any holes. Also, a router pad can help reduce scratches in the finish.

To mount the neck to the guitar body:

1. Insert the neck into the neck pocket, and check to make sure the neck and body are flush as shown in **Figure 9**.

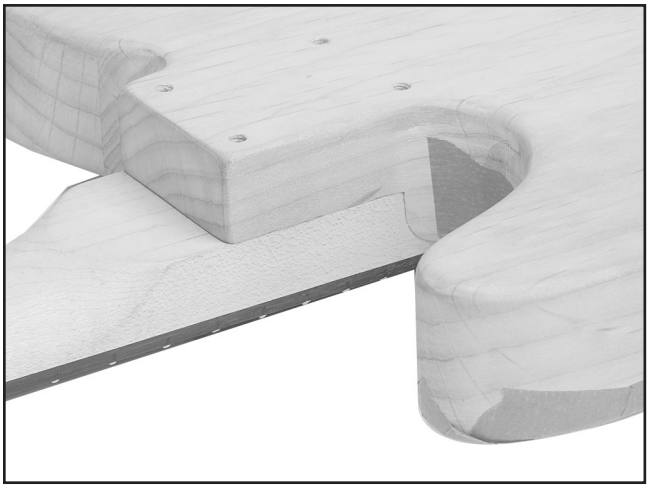


Figure 9. Making neck and body flush.

2. Clamp the neck and body together.

3. Set the guitar facedown on top of two 4x4's (cut to 12") for support.

4. Insert a 5⁄32" drill bit into each neck hole (**Figure 10**). While pressing down slightly, twist the drill bit by hand to make pilot holes n the neck.

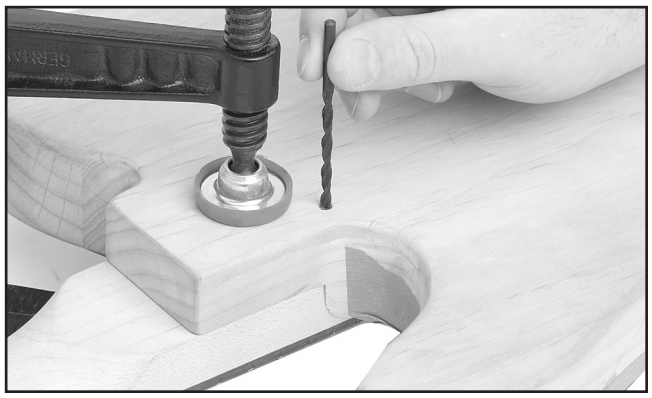


Figure 10. Making a pilot hole in the neck.

5. Unclamp the neck from the body.

To determine neck mounting hole depth:

1. Secure the 5⁄32" drill bit in the drill press chuck, raise the table, and set the neck, fretboard-down, on top of a clean piece of scrap wood on the table.

2. Set the drill press depth stop so the tip of the bit will ONLY drive half way through the neck.

   Note: *Correctly set the depth stop or the bit may drill through the fretboard!*

Another way to determine neck mounting hole depth (Optional):

1. Insert the neck into the neck pocket.

2. Place the neckplate on top of the body so a mounting hole protrudes beyond the body and neck (see **Figure 11**).

3. Insert a 5 x 45mm screw through the plate so it hangs down to the side of the neck and body.

4. Gently mark the screw tip depth with a pencil**.**

   Note: *You may want to cover the screw tip marking location with masking tape to avoid scratching the finish.*

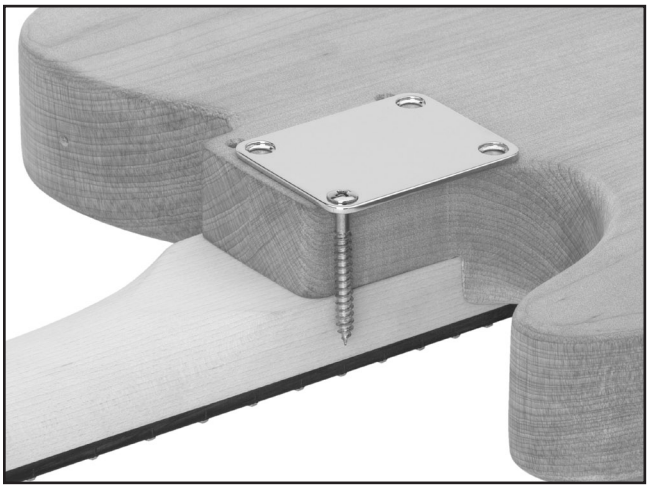


Figure 11. Using screw tip depth to set depth stop.

5. Set the neck fretboard face down on the drill press table, and set the depth stop to the mark from **Step 4**.

To drill mounting holes in the neck:

1. Lower the 5⁄32" drill bit over the center of the pilot holes and drill the holes to the correct depth.

To mount the neck to the body:

1. Insert the neck into the neck pocket, and place the neckplate on the body.

   Note: *Do not glue the neck to the body.*

2. Align the mounting holes in the neck and body and neckplate.

3. Fasten the four 5 x 45mm screws, but do not final tighten them (**Figure 12**).

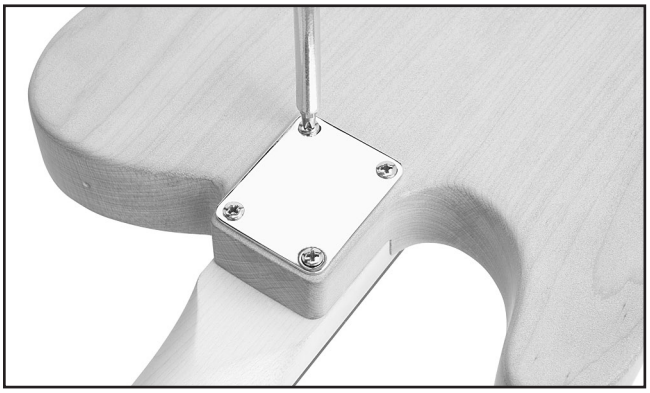


Figure 12. Fastening neck to body.

Positioning Pick Guard, Control Plate & Bridge

The following steps require you to mark the guitar body. To avoid damaging the finish, place masking tape on the guitar body and gently mark the tape.

In the following steps the bridge, control plate, and pick guard will be installed temporarily to correctly orient them.

Components and Hardware Needed:	**Qty**
Guitar Body and Neck (Assembled)	1
Pick Guard	1
Control Plate	1
Bridge	1

To position the pick guard, control plate and bridge:

1. Turn the guitar face up, thread the pick guard pickup wires through the center cavity (**Figure 13**) into the control plate cavity, then place the pick guard on the body.

2. Tuck the control plate wires into the control plate cavity.

3. Place the control plate on the body so it fits snugly into the curve on the pick guard as shown in **Figure 13**.

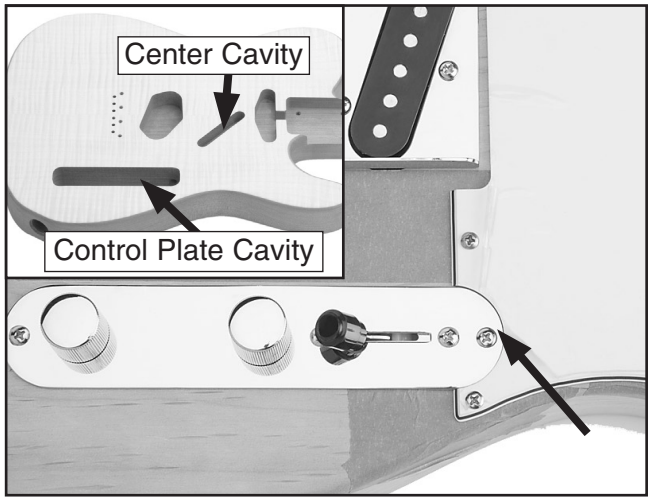


Figure 13. Control plate fits into pick guard.

4. Place a 36" long straightedge over the center of the fretboard inlays and over the bridge cavity, then mark the center line on the guitar body (**Figure 14**).

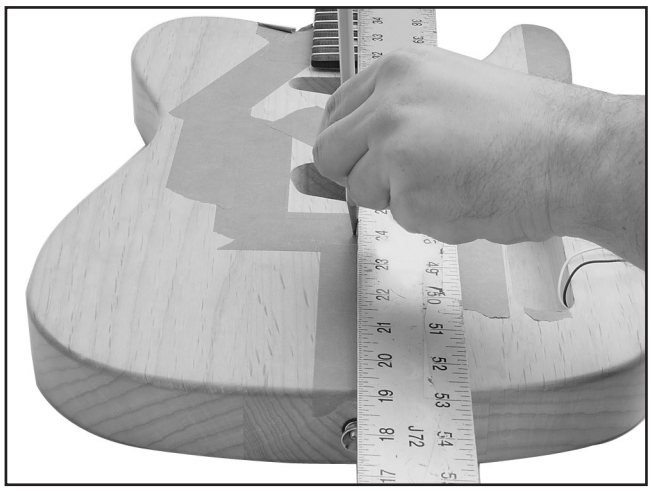


Figure 14. Marking center line.

5. Place a ruler across the body at several locations and mark the half-way point to double check the center line location against the mark in **Step 5**.

6. Insert the bridge into the bridge cavity and align the mounting holes.

7. Using the straightedge, measure 25½" from the fretboard side of the nut slot (**Figure 15**) along the center line to the bridge point (**Figure 16**), and mark this location on the guitar.

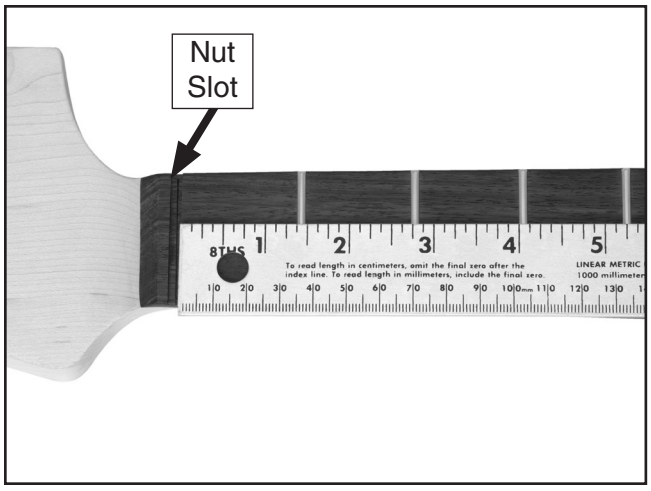


Figure 15. Measuring 25½" from nut along center line.

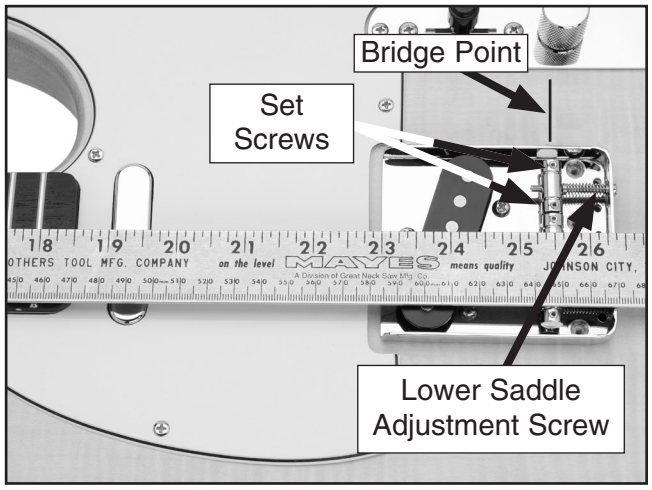


Figure 16. Bridge point and high E saddle adjustment screw.

8. Using a Phillips head screwdriver, turn the lower saddle adjustment screw so the set screws shown in **Figure 16** are centered over the bridge point.

9. Align the control plate, pick guard, and bridge so the bridge is parallel to the control plate (leave an even distance between the pickguard and bridge).

10. Mark the mounting holes for the control plate and pick guard (**Figure 17**), then remove these components, as well as the neck, bridge, and pick guard pickup.

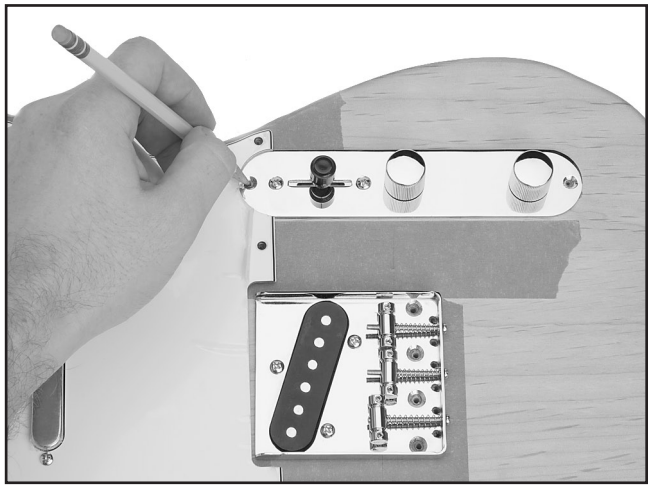


Figure 17. Marking control plate holes.

Note: *Take care to correctly position the control plate mounting holes so you do not drill into the control plate cavity.*

11. Using a 1⁄16" drill bit, drill 3⁄8" deep holes in the body for the pick guard and control plate.

12. Determine whether you want to mount the strings through the bridge or whether you want to mount them to the body using the ferrules.

—If you decide to mount the strings through the bridge, skip to **Mounting Tuners, Page 14**.

—If you decide to mount the strings through the body, go to **Installing Ferrules**.

Installing Ferrules

The strings can be installed through the body using the ferrules—instead of just through the bridge. One advantage of using the ferrules is that the strings will sustain notes longer. Ferrules can be mounted flush (**Figure 18**) or above (**Figure 19**) the surface of the guitar.

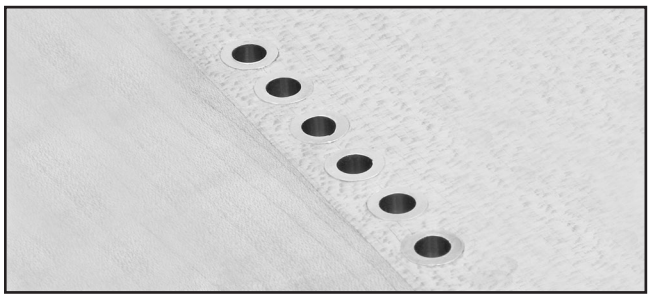


Figure 18. Flush mounted ferrules.

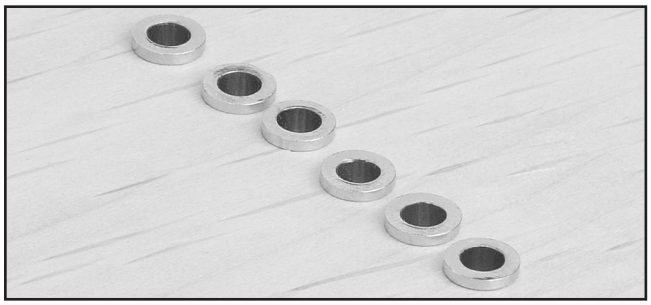


Figure 19. Above surface mounted ferrules.

Components and Hardware Needed:	**Qty**
Guitar Body	1
Ferrules	6

To install the ferrules:

1. Determine whether you want to flush mount the ferrules or let them sit above the body. For flush mounting instructions, go to **Flush Mounting** on this page. To mount ferrules above the guitar body, go to **Above Surface Mounting** on this page.

Flush Mounting

1. Place the body topside down on a drill press and drill 7/16" down into a predrilled pilot hole using a a ¼" bit.

2. Using a 5/16" drill bit, drill 3/64" deep into the same pilot hole.

   Note: *We recommend setting the depth stop and using a 5/16" end mill for greater precision*.

3. Repeat **Steps 1-2** for each of the other ferrule holes.

4. Set the ferrules into the holes so they are flush with the surface of the guitar.

Above Surface Mounting

1. Place the top of the guitar face down on a drill press table, then drill 3/8" down into the predrilled pilot holes using a ¼" bit.

2. **Note:** *We recommend using a depth stop for greater precision.*

3. Drive the ferrules into the holes with a rubber dead blow hammer.

4. Go to **Mounting Tuners.**

Mounting Tuners

Components and Hardware Needed:	**Qty**
Neck	1
Tuners	1
Chrome Screws 2.1 x 12mm	7
Bushings	6

To install the tuners:

1. Place the neck fretboard down on a flat surface and insert the tuners into the headstock holes.

2. Use a ruler to align the tuners so they are parallel to the edge of the headstock, and mark the mounting holes as shown in **Figure 20**.

   Note: Taping the ruler to the headstock may reduce movement when you mark the tuner mounting holes.

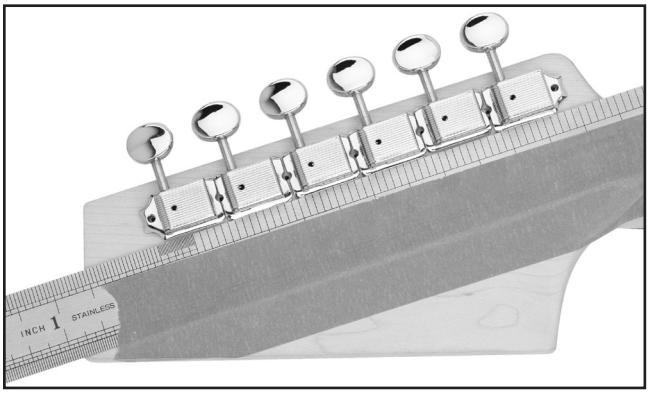


Figure 20. Tuners aligned.

3. Remove the tuners.

   —If the neck is attached to the body, remove it now.

4. Fasten a 9/16" thick wood shim with tape on the top side of the headstock and over the tuner holes (**Figure 21**). This will help stabilize the neck during the next step.

5. Using a 1/16" drill bit, drill 7/16" deep holes into the back of the headstock (**Figure 21**).

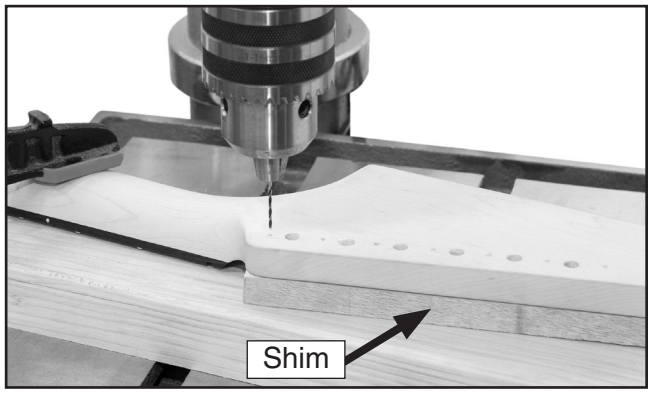


Figure 21. Headstock supported with shim.

Note: *Drilling the holes deeper than ½" could result in drilling out through the top of the headstock. Set the correct depth with the depth stop on your drill press.*

6. Place the pegboard face up on a level surface, and use a dead blow hammer or a dowel in a drill press to drive the six bushings into the tuner mounting holes until they are flush with the headstock (**Figure 22**).

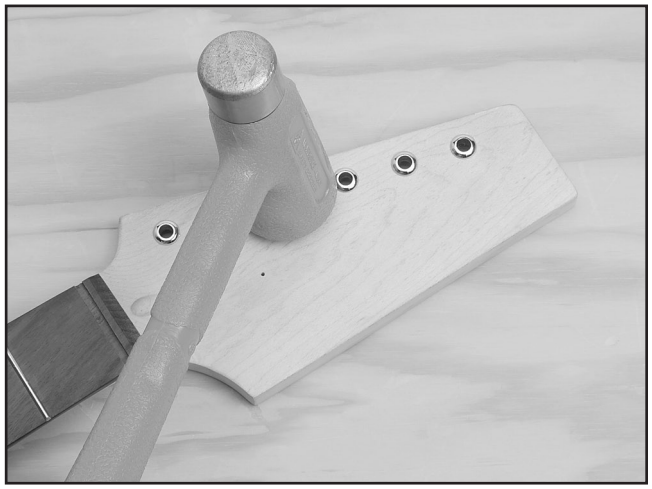


Figure 22. Installing bushings on headstock.

Note: *If you have trouble inserting the bushings, turn a drill bit by hand in the top of the hole to ream it just enough to insert the bushing.*

7. Turn the neck over, insert the tuners into the bushings, and mount them with the 2.1 x 12mm screws.

Wiring Pickups

This guitar comes with a control plate that has most of the components soldered in place. You only need to solder the pickup wires onto the three way switch and volume control. If done incorrectly, the soldering can damage the components. If you are unsure of your skills, do your research, practice on scrap wires, or take it to a professional.

Components and Hardware Needed:	**Qty**
Guitar Body	1
Control Plate	1
Pick Guard	1
Pick Guard Pick Up	1
Bridge	1
Output Jack	1

To wire the pickups:

1. Thread the pick guard pickup and bridge pickup wires through the channels and holes in the control plate cavity as shown in **Figure 23**. (Also, refer to the **Wiring Diagram** on **Page 29** and the **Electrical Photos** on **Pages 27-28.**)

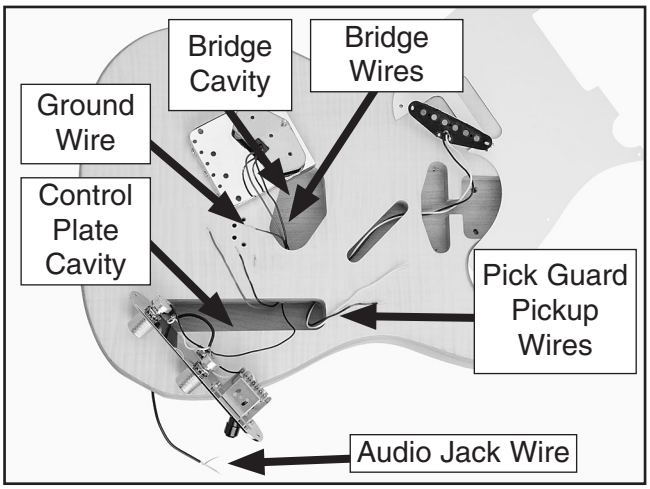


Figure 23. Wires threaded through body.

2. Thread the ground wire through the hole in the control plate cavity and into the bridge cavity (**Figure 23**).

3. Push the audio jack wire out through the hole in the end of the body.

4. Solder the pickup wires to the volume and three way switch as shown in the **Wiring Diagram** on **Page 29** and the **Electrical Photos** on **Pages 27-28**.

5. Solder the audio jack wires onto the output jack.

Installing Output Jack

Components and Hardware Needed: **Qty**
Output Jack 1
Output Jack Cover 1
Chrome Screws 3.1 x 12mm 2

To install the output jack:

1. Thread the output jack onto the jack cover.

2. Place the output jack cover in the jack cavity, and mark the mounting holes.

3. Using a 1/16" drill bit, drill 3/8" holes at a 45° angle into the body as shown in **Figure 24**.

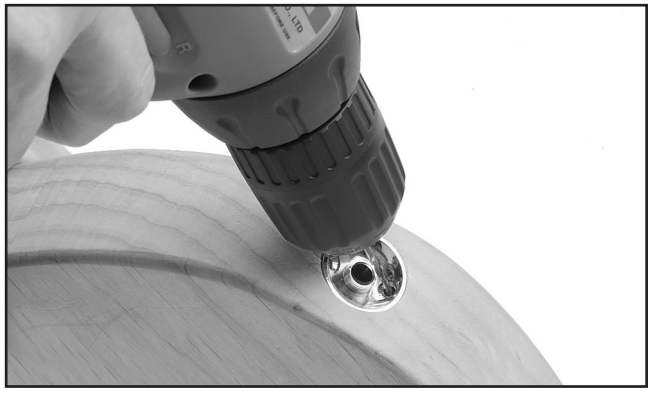


Figure 24. Drilling output jack mounting holes.

4. Mount the output jack cover with two 3.1 x 12mm screws.

Installing Bridge, Pickups & Controls

To reduce humming in your amp, the ground wire must contact the bridge plate.

Components and Hardware Needed: **Qty**
Guitar Body 1
Pick Guard 1
Chrome Screws 3.5 x 25mm 4
Chrome Screws 3.1 x 12mm 10

To install the control plate and pickups:

1. Tape the ground wire so the exposed portion curls over the bridge cavity as shown in **Figure 25**.

2. Place the bridge into the cavity so the plate makes contact with the wire.

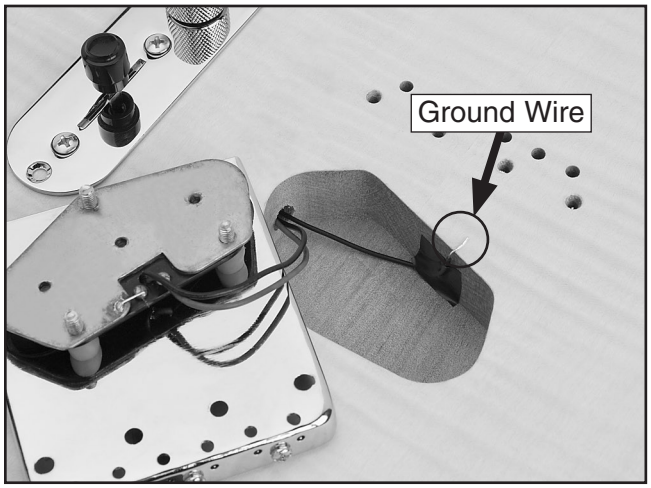


Figure 25. Ground wire above bridge cavity.

3. Secure the bridge with the 3.5 x 25mm screws, and fasten the control plate with 3.1 x 12mm screws.

4. Secure the pick guard pickup to the bottom of the pickup cavity with the included screws and springs as shown in **Figure 26**.

Figure 26. Fastening pick guard pick up.

5. Remove the plastic wrapping on the pick guard, and secure it using 3.1 x 12mm screws.

Strap Buttons

The strap buttons are positioned on the guitar as shown in **Figure 27**.

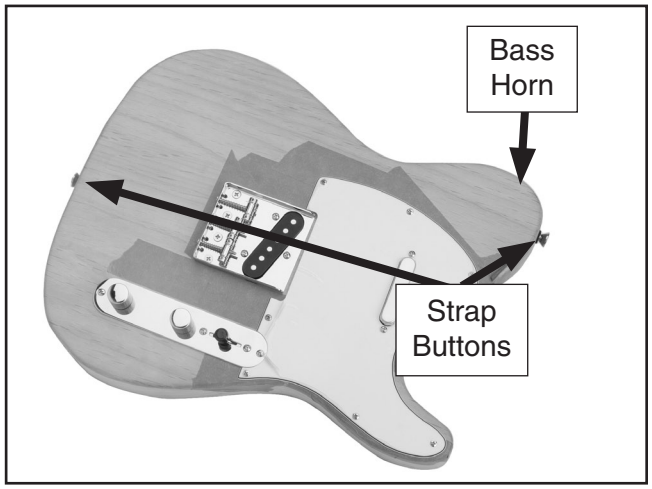


Figure 27. Example of strap button placement.

Components and Hardware Needed	**Qty**
Guitar Body	1
Chrome Screws 3.5 x 25mm	2
Strap Buttons	2

To attach the strap buttons to the guitar:

1. Using a 3/32" drill bit, drill 1/2" deep holes at the end of the guitar—on the center line—and on the bass horn (**Figure 27**).

2. Secure each of the strap buttons to the guitar body with a 3.5 x 25mm screw.

Installing Nut

Components and Hardware Needed:	**Qty**
Guitar Body	1
Nut	4
Neck	1
Silver Neckplate	1
Chrome Screws 5 x 45mm	4

To install the nut:

1. Install the neck onto the body using the 5 x 45mm screws and silver neckplate.

2. Use a chisel or razor blade to scrape any finish out of the nut slot. DO NOT remove any wood from the nut slot.

3. Slide the nut into the slot.

   —If the nut will not fit into the slot, sand one side on a piece of sandpaper until it fits snugly into the slot as shown in **Figure 28**. Make sure the large slots on the nut are toward the top of the neck.

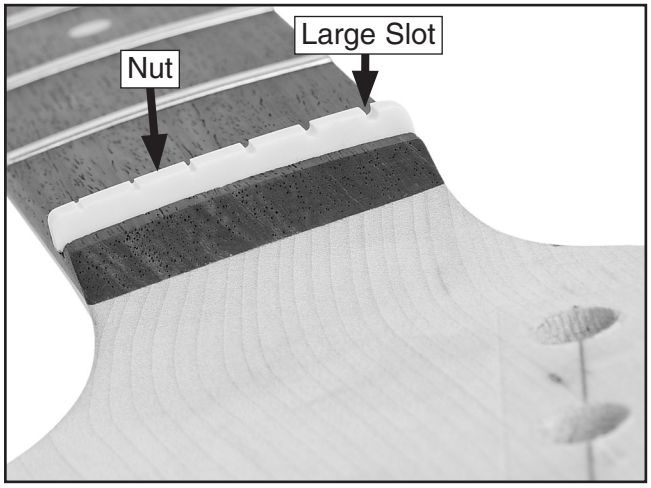


Figure 28. Nut installed.

4. Remove the nut, spread a thin layer of glue in the nut slot, and center the nut in the nut slot.

5. Install the strings, as described on **Page 18**, to hold the nut in place until the glue dries.

6. Wipe away the excess glue before it sets up, then allow the glue to dry for 24 hours.

Winding Strings

Strings can be installed through the body using the ferrules or they can be installed through the bridge if the ferrules were not used.

Components and Hardware Needed: **Qty**
Guitar 1
Strings 6

The correct position of the guitar strings is shown in **Figure 29**. The thin High "E" string is the "1st" string and the thick Low "E" string is the "6th."

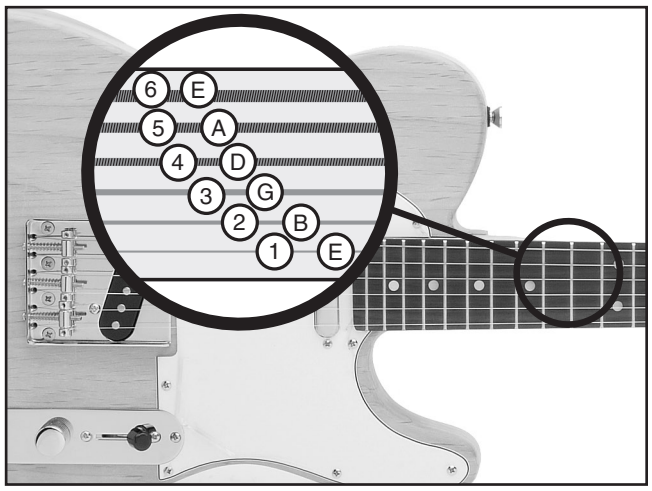


Figure 29. Example of correct string locations.

To install strings through the body:

1. If you installed ferrules, thread the 1st string through the ferrule as shown in **Figure 30**.

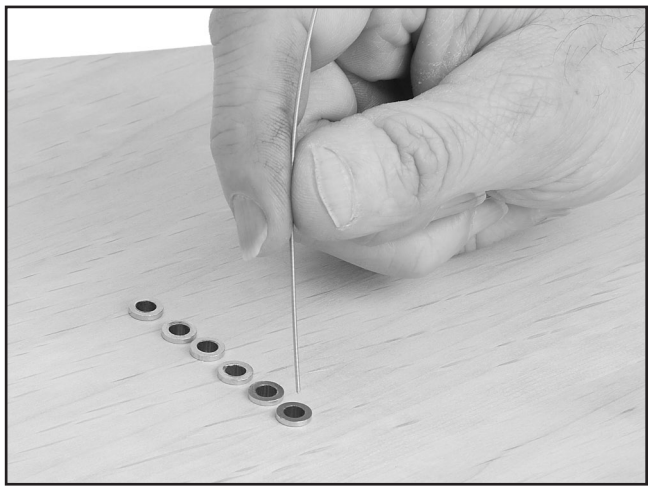


Figure 30. Example of threading string through ferrule.

2. Thread the string through the hole in the top of the guitar and through the bridge.

3. Guide the string across the saddle (**Figure 32**), over the nut, and through the hole in the corresponding tuning post.

4. Allow only enough slack in the string for 2-3 rotations around the tuning post.

Note: *If too much slack is allowed, then the string could wind off the tuning post after many successive rotations. If not enough slack is allowed, then the string may not hold the winding tension.*

5. Bend the string at a right angle across the edge of the tuning post.

6. Rotate the tuners until the string just begins to hold the winding tension (**Figure 31**).

Note: *DO NOT tighten the strings beyond the initial tensioning at this time. Final tensioning should be completed during the string tuning process.*

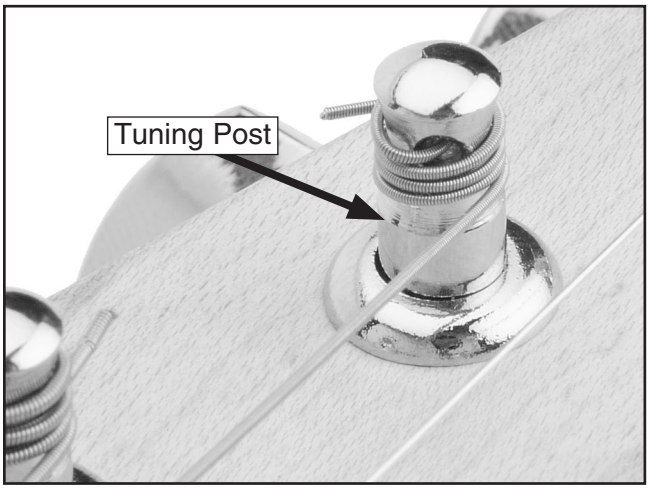


Figure 31. String wrapped around tuning post.

7. Use wire cutters (optional) to cut off the excess string.

8. Repeat the above process for the remaining strings.

To install the strings using only the bridge:

1. Slide the 1st string through the corresponding hole in the bridge (**Figure 32**).

2. Repeat **Steps 3-8** in the previous subsection.

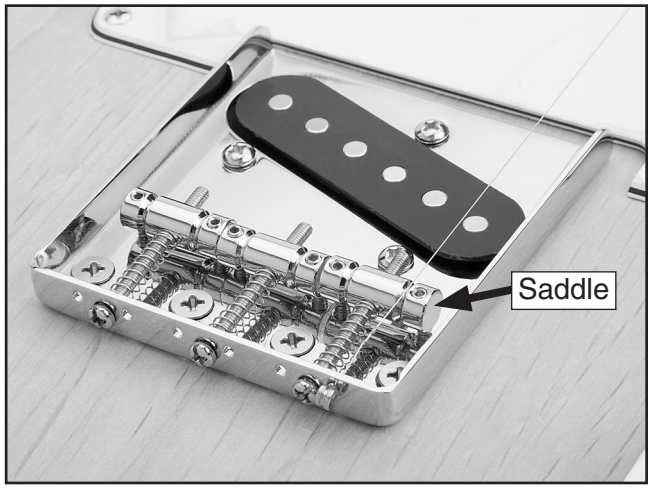


Figure 32. 1st string installed.

String Retainers

Components and Hardware Needed: **Qty**
Neck and Body (Assembled)..... 1
String Retainers..... 2
Chrome Screws 2.5 x 14mm..... 2

The string retainers mount between the 1st and 2nd strings and between the 3rd and 4th strings (**Figure 33**). String retainers are designed to hold the strings down against the nut to achieve correct tuning.

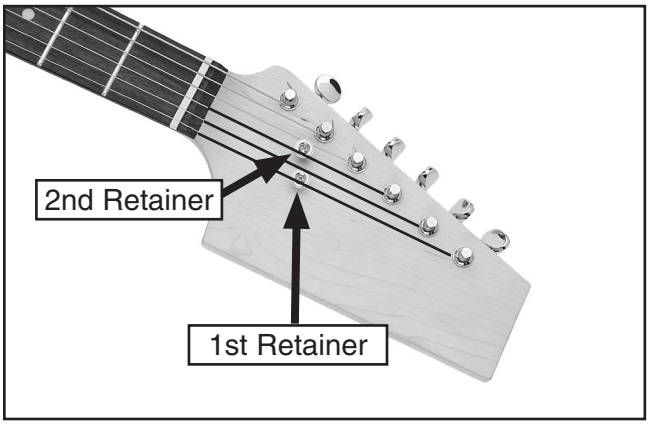


Figure 33. String retainer locations.

To install the string retainer:

1. Place the 1st string retainer on top of the 1st and 2nd strings near the second tuner.

2. Using a 1⁄16" drill bit positioned through the string retainer, drill a ¼" deep hole into the headstock.

   Note: *Drilling the hole deeper than ½" could result in drilling out the bottom of the headstock.*

3. Slide a 2.5 x 14mm screw through the retainer and fasten it to the headstock (**Figure 33**).

4. Place the 2nd string retainer on top of the 3rd and 4th strings and repeat **Steps 2-3**.

SECTION 5: SETUP

General

Guitar set up is an art that requires skill, patience and experience. If you have the patience, you can acquire the skill and experience. If you don't have the patience, you may want to have your guitar set up by a qualified guitar technician.

This section presents an overview of setup practices. We highly recommended that you research more in-depth methods. Books on setting up electric guitars can be ordered through Grizzly Industrial, luthier supply catalogs, or may be available through your local library.

Neck Adjustment

The guitar neck was adjusted perfectly straight before it was packaged; however, the moisture content of wood acclimates to the humidity of the surrounding environment. This characteristic results in movement of the wood components with regards to alignment. The neck may require adjustment several times each year, especially in regions where the seasonal climate changes are more drastic.

Components and Hardware Needed: **Qty**
Guitar with Strings Installed 1

Tools Needed
Metal Straightedge 18" 1
Hex Wrench 4mm.....1
Feeler Gauge Set 1
Phillips Head Screwdriver.....1

To adjust the bow of the guitar neck:

1. Tighten the strings to playing tension.

2. Place a straightedge from the 1st fret to the 17th. Measure any gaps between the straightedge and the frets with the feeler gauge.

—If the neck is flat, or bowed up 0.012" or less, the neck is set up correctly. Continue to the next subsection.

—If the gap is greater than 0.012", or if the neck bows away from the straightedge, continue to **Step 3**.

3. Loosen the strings, remove the pick guard and pick guard pickup, and turn the truss rod nut (**Figure 34**) counterclockwise with a 4mm wrench to release tension on the neck. Retighten until the nut begins to grab.

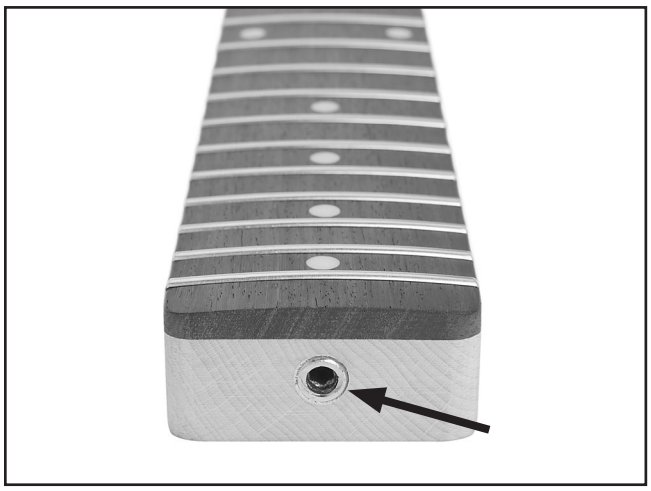


Figure 34. Truss rod nut.

4. To flatten a down bow, turn the truss rod nut a 1/4 turn clockwise. To correct an up bow, turn the nut a 1/4 turn counterclockwise.

5. Tighten the strings and recheck the neck with the straightedge.

—If the neck is correctly adjusted, go to the next section.

—If the neck is still out of adjustment return to **Step 3**.

6. Replace the pickup and pick guard, and tighten the strings.

String Height

Tools Needed	Qty
Hex Wrench 1.5mm	1
Guitar Capo	1
Metal Straightedge	1
Steel Ruler (1/64" Resolution)	1

Correct string height is crucial for maximizing the playability of your electric guitar. The string height is the distance between the top face of the fret and the bottom face of the string (**Figure 35**).

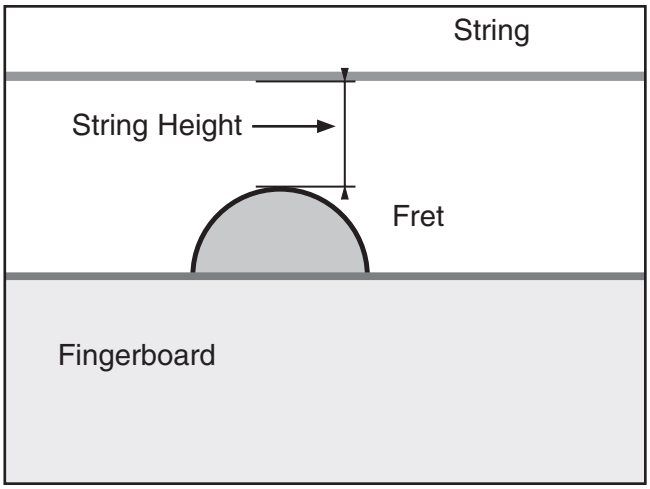


Figure 35. String height measurement.

To adjust the string height:

1. Place a capo on the 1st fret.

2. Measure the string height at the twelfth fret as shown in **Figure 36**.

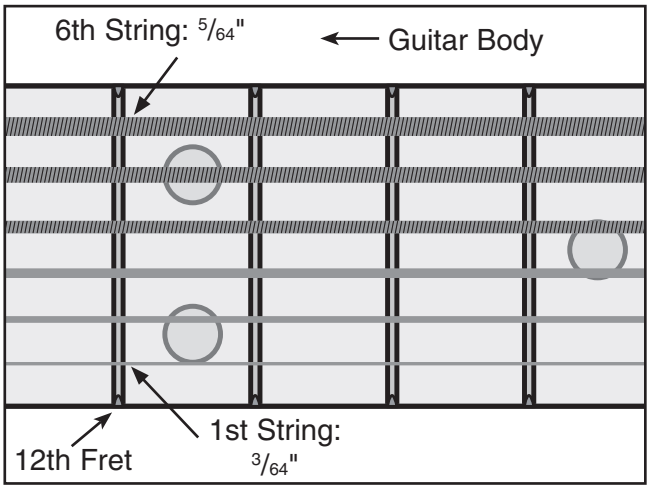


Figure 36. Correct 12th fret string heights.

The 1st string measurement should be 3/64", the 6th string measurement should be 5/64".

—If the string heights are correct, then continue to the next sub-section.

—If the string heights are incorrect at the 12th fret, then continue to the next step.

3. Use the included 1.5mm hex wrench to adjust the saddle height setscrews (**Figure 37**) until the string heights are correct.

—Turn the screws clockwise to raise the height of the string saddle, thus increasing the string height.

—Turn the screws counterclockwise to lower the height of the string saddle, thus decreasing the string height.

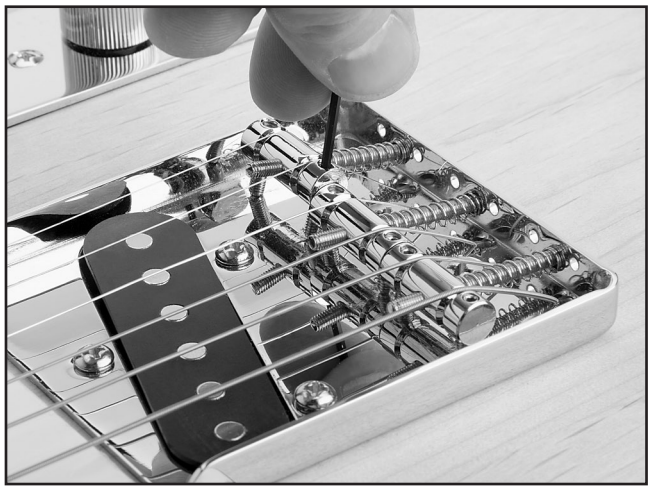


Figure 37. Adjusting string height.

4. After setting the correct height for the 1st and 6th strings, adjust the middle strings so they gradually increase in height from the 1st string through the 6th string.

5. Remove the capo.

Pickup Height

Pickup height can have a dramatic effect on the audio output signal. The closer the strings are to the pickup, the higher the audio output signal will be. If the strings are too close, distortion is caused by magnetic interference from the electronic components.

Tools Needed	Qty
Metal Straightedge	1
Phillips Head Screwdriver	1

To measure the string height at the pickup:

1. Measure the height of the 1st and 6th strings at the pickup while the strings are "fretted" at the 21st fret (**Figure 38**).

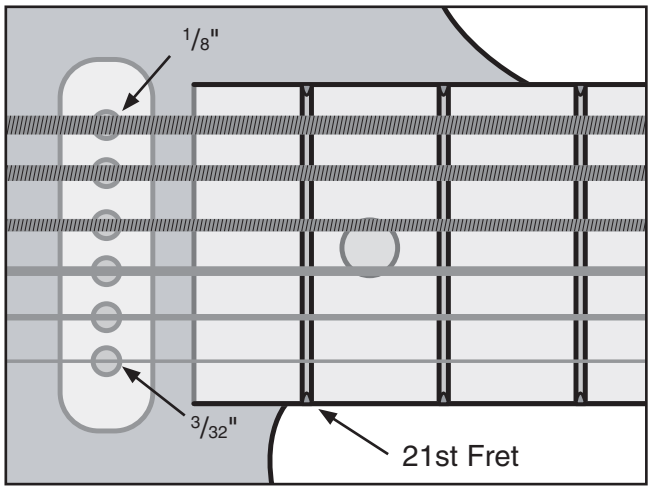


Figure 38. String heights over the pickup.

2. With a Phillips head screwdriver, adjust the screws on each side of the pickup until the 1st string is 3/32" above the pickup and the 6th string is 1/8" above the pickup.

—Turn the screws clockwise to raise the height of the pick up, therefore, decreasing the string height.

—Turn the screws counterclockwise to lower the height of the pick up, therefore, increasing the string height.

Tuning

Tuning is an important guitar concept. If the guitar is not in tune, the resulting sound is unpleasant. These instructions explain how to tune by ear. You can also tune by using an electronic tuner such as the Grizzly H3097 Chromatic Tuner shown on **Page 24**.

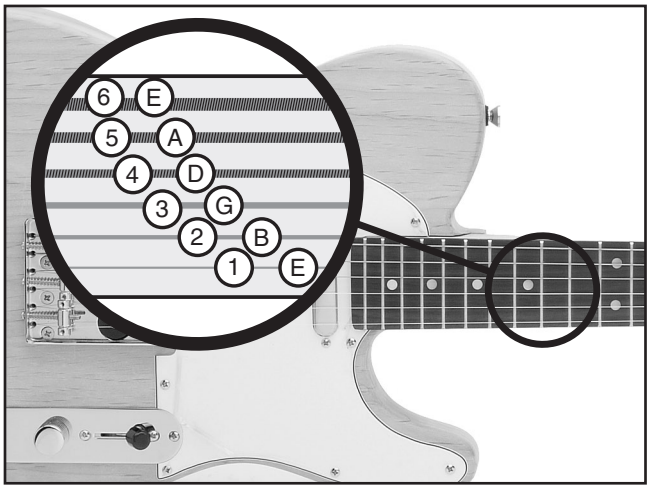


Figure 39. Example of standard tuning.

To tune the guitar:

1. Play a Low E pitch on a piano, a tuning fork, or an electronic computer file.

2. Play an open (non-fretted) 6th string and adjust the tuner to match the Low E.

Note: *Always tune up. If the string is tuned high, loosen the string to lower the pitch, then tune the string up to the correct note.*

3. Tune the 5th string by playing the 6th string while it is being pressed (fretted) at the 5th fret, and then play the open 5th string. Adjust the 5th string tuner until the notes match.

4. Tune the 4th string by playing the 5th string while it is being pressed (fretted) at the 5th fret, and then play the open 4th string. Adjust the 4th string tuner until the notes match.

5. Perform the same tuning step on the 3rd and 4th string.

6. When tuning the 2nd string, fret the 3rd string at the 4th fret instead of the 5th fret.

7. Tune the 1st string in the same manner as the 6th, 5th, 4th, and 3rd strings.

Setting Intonation

Tools Needed **Qty**
Phillips Head Screwdriver.....1

Setting the intonation adjusts the length of the string to correct for flatness/sharpness on each string. This is a simple process that takes a lot of trial and error.

To set the intonation:

1. Lightly touch and then release the 1st string directly above the twelfth fret as you pluck the string to play a harmonic note.

2. Now pluck the string while holding it fretted at the twelfth fret. If this note is sharper than the note played in **Step 1**, move the saddle away from the neck by turning the saddle adjustment screw (**Figure 40**) clockwise. If this note is flat in comparison, move the saddle toward the neck.

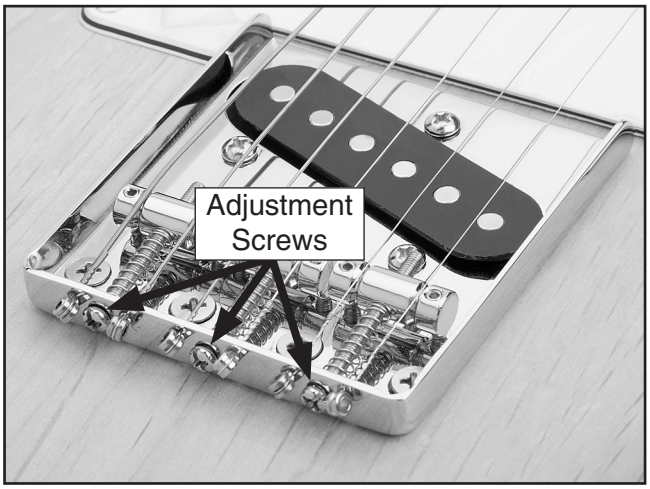


Figure 40. Saddle adjustment screws.

Note: *This can also be done with an electronic tuner by tuning the harmonic note to be exactly in tune and then adjusting the saddle until the note played in* ***Step 2*** *is also in tune.*

3. Repeat **Steps 1–2** until the string is in tune. Repeat the process for the rest of the strings.

SECTION 6: REFERENCE INFO

Accessories

G7984—Face Shield
H1298—Dust Sealed Safety Glasses
H1300—UV Blocking, Clear Safety Glasses
H2347—Uvex® Spitfire Safety Glasses
H0736—Shop Fox® Safety Glasses
Safety Glasses are essential to every shop. If you already have a pair, buy extras for visitors or employees. You can't be too careful when it comes to shop safety!

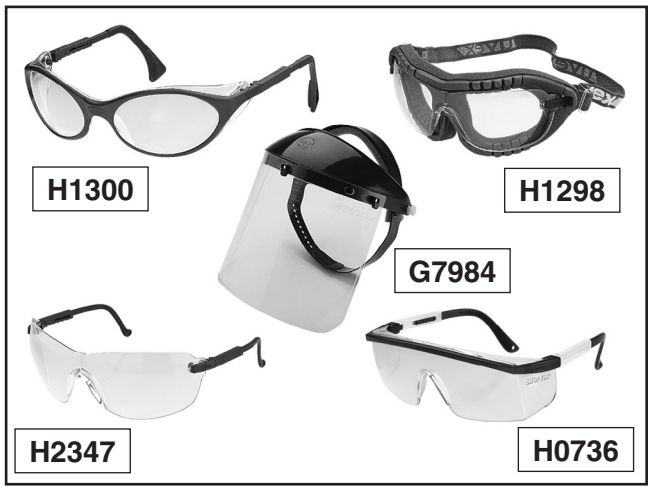


Figure 41. Our most popular safety glasses.

H3097—Chromatic Tuner
An absolute must for any guitar player, this tuner allows you to tune your acoustic or electric guitar dead on. Includes 9V battery.

Figure 42. Model H3097 Chromatic Tuner.

H0818—Fine Prepolishing Paste, 1.85 lb
H4873—Medium Prepolish Liquid, 1 Qt
H0821—High Gloss Polishing Liquid, 1 Qt
Menzerna professional polishing compounds will remove any fine scratches from the finish and give your instrument the incredibly high gloss finish that you are looking for.

Figure 43. Menzerna polishing compounds.

G9845—6 Pc. Hollow Punch Set
Punch perfectly round holes in one easy step. Includes knurl-gripped punches for 3⁄16", 1⁄4", 5⁄16", 3⁄8", 7⁄16" and 1⁄2" holes. Great for cutting gasket material!

Figure 44. Model G9845 Punch Set.

Call 1-800-523-4777 To Order

H5750—Vinyl Washcoat/Sealer, 1Qt
H5751—Nitrocellulose Lacquer, Gloss, 1 Qt
H5752—Nitrocellulose Lacquer, Gloss, 1 Gal
H5753—Nitrocellulose Lacquer, Satin, 1 Qt
H5754—Nitrocellulose Lacquer, Satin, 1 Gal
H5755—Retarder for Lacquer, 1 Qt
H5756—Natural Filler, 1 Pint
H5757—Mahogany Filler, 1 Pint
H5759—Filler Reducer, 1Qt
McFadden's nitrocellulose lacquer is the leading lacquer used by custom guitar builders. It sprays and buffs really well and is capable of giving you a finish that looks "wet."

Figure 45. Model H5750-59 McFadden's Lacquers and Fillers.

G1530—Router Pad
This natural rubber pad eliminates holding or clamping work while routing or sanding. It effectively grips the workpiece for safe non-slip routing. Thin pad can be easily rolled up and stored when not in use. Pad measures ⅛" x 24" x 36"

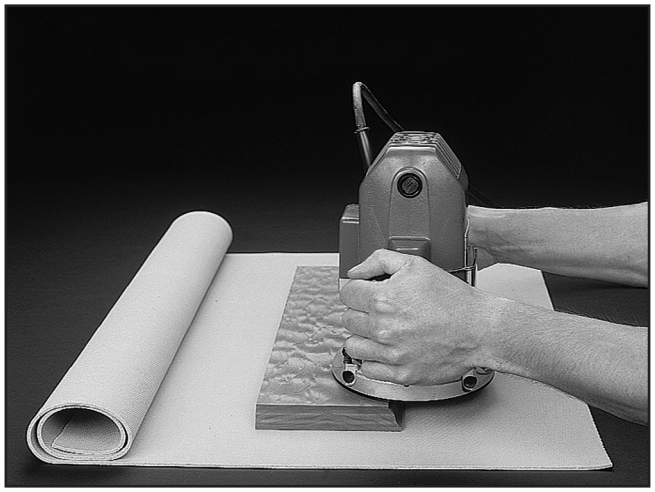


Figure 46. Model G1530 router pad.

H2499—Small Half-Mask Respirator
H3631—Medium Half-Mask Respirator
H3632—Large Half-Mask Respirator
H3633—Disposable Cartridge Filter Pair
H3635—Disposable Cartridge Filter Pair
This lightweight elastomeric facepiece has cradle suspension, easy adjust headstraps and low profile for greater field of vision and compatibility with normal use of glasses or goggles. Purchase cartridges separately depending upon intended application.

Model H3633 protects against organic vapor, sulfur dioxide, hydrogen chloride and chlorine. Model H3635 protects against all particulate aerosols.

Figure 47. Half-mask respirator and disposable cartridge filters.

Call 1-800-523-4777 To Order

Premier Red Mirror Finish Slicon Carbide Waterproof Sandpaper
Model H8912—1000 Grit, 50 Pack
Model H8913—1200 Grit, 50 Pack
Model H8914—1500 Grit, 50 Pack
Model H8915—2000 Grit, 50 Pack
Ideal for producing very fine finishes in wet applications. Ultimate flexibility, and environmentally stable; resists humidity-caused curling. 50 sheets per package.

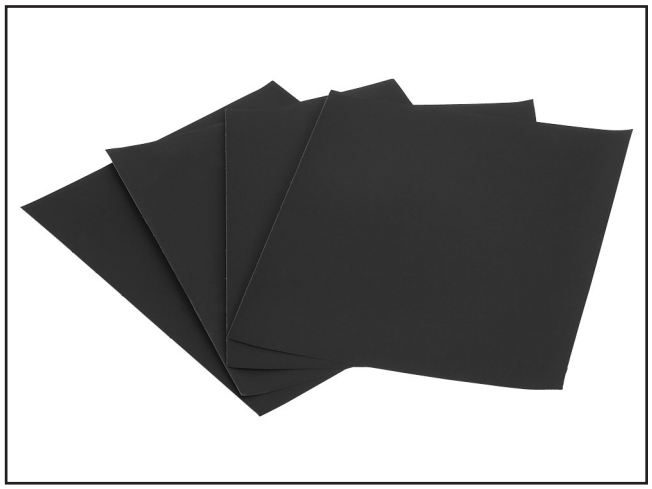


Figure 48. Model H8912 Sandpaper.

Light Paper Backed A/0 Sandpaper
Model G6194—80 Grit, 10 Pack
Model G6195—100 Grit, 10 Pack
Model G6196—120 Grit, 10 Pack
Model G6197—150 Grit, 10 Pack
Model G6198—180 Grit, 10 Pack
Model G6199—220 Grit, 10 Pack

Wet/Dry Silicon Carbide Sandpaper
Model G6200—100 Grit, 10 Pack
Model G6201—120 Grit, 10 Pack
Model G6202—180 Grit, 10 Pack
Model G6203—220 Grit, 10 Pack
Model G6204—240 Grit, 10 Pack
Model G6205—320 Grit, 10 Pack
Model G6206—400 Grit, 10 Pack
We offer a variety of 9" x 11" sanding sheets in convenient 10 packs in 80 - 220 grits for just about any requirement.

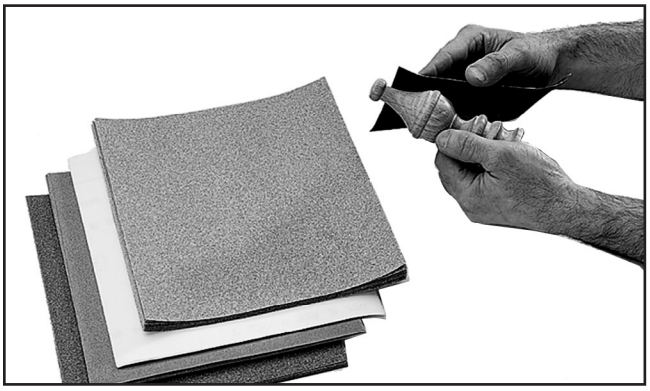


Figure 49. Assorted sandpaper.

Electrical Components

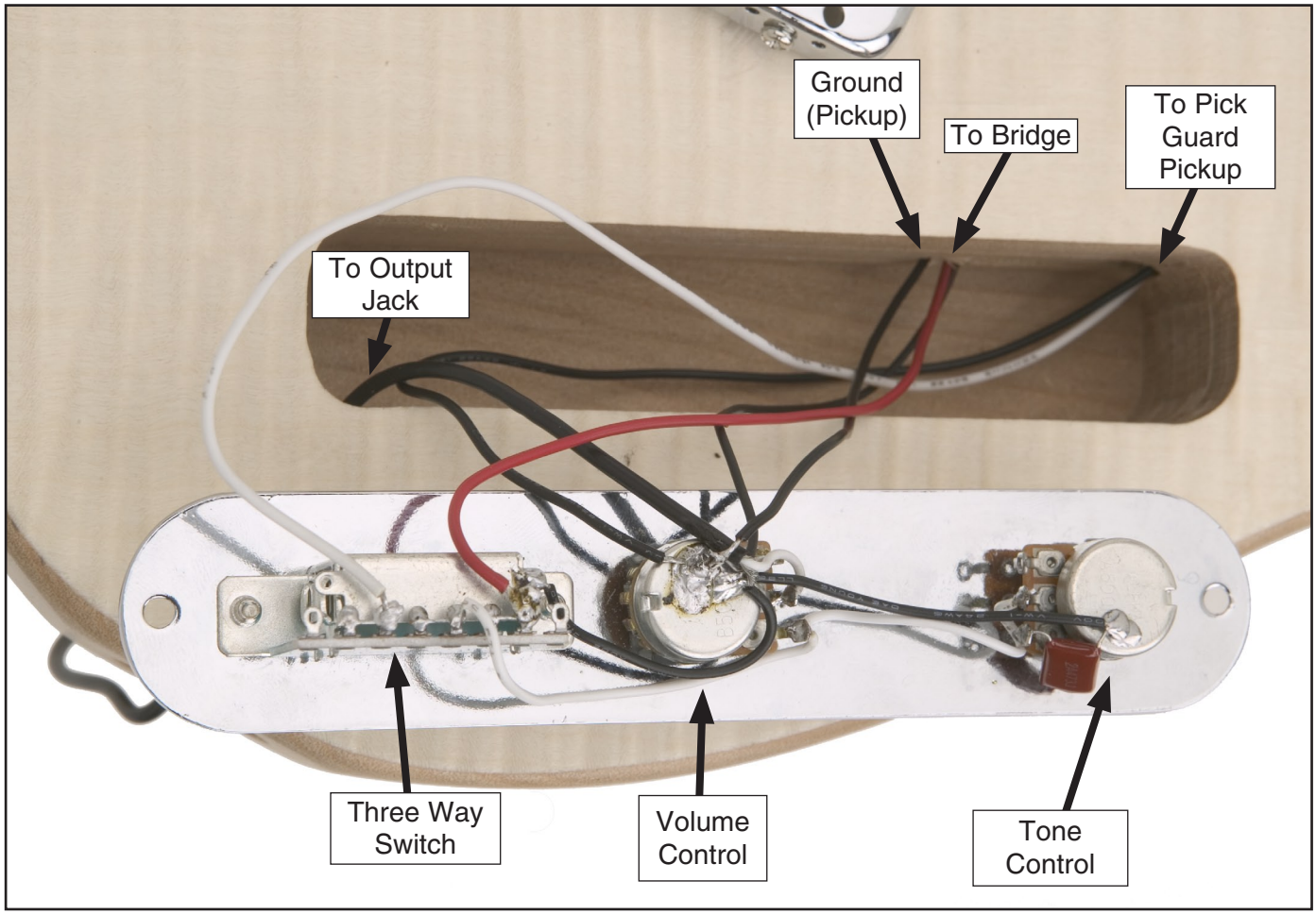


Figure 50. Control plate wiring.

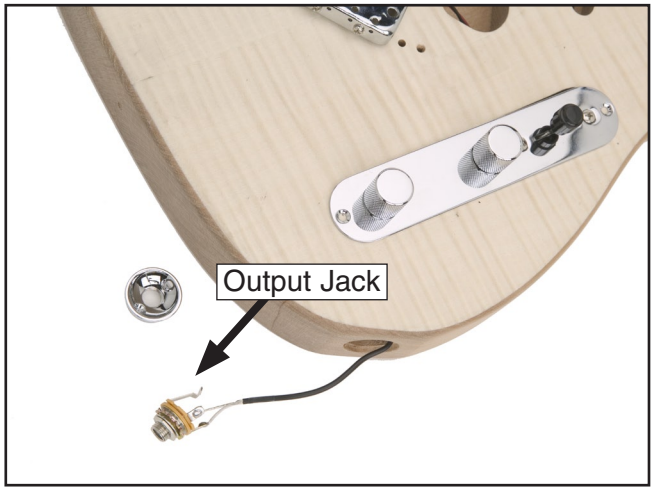


Figure 51. Output jack wiring.

Available in color online at www.grizzly.com

Electrical Components

Available in color online at www.grizzly.com

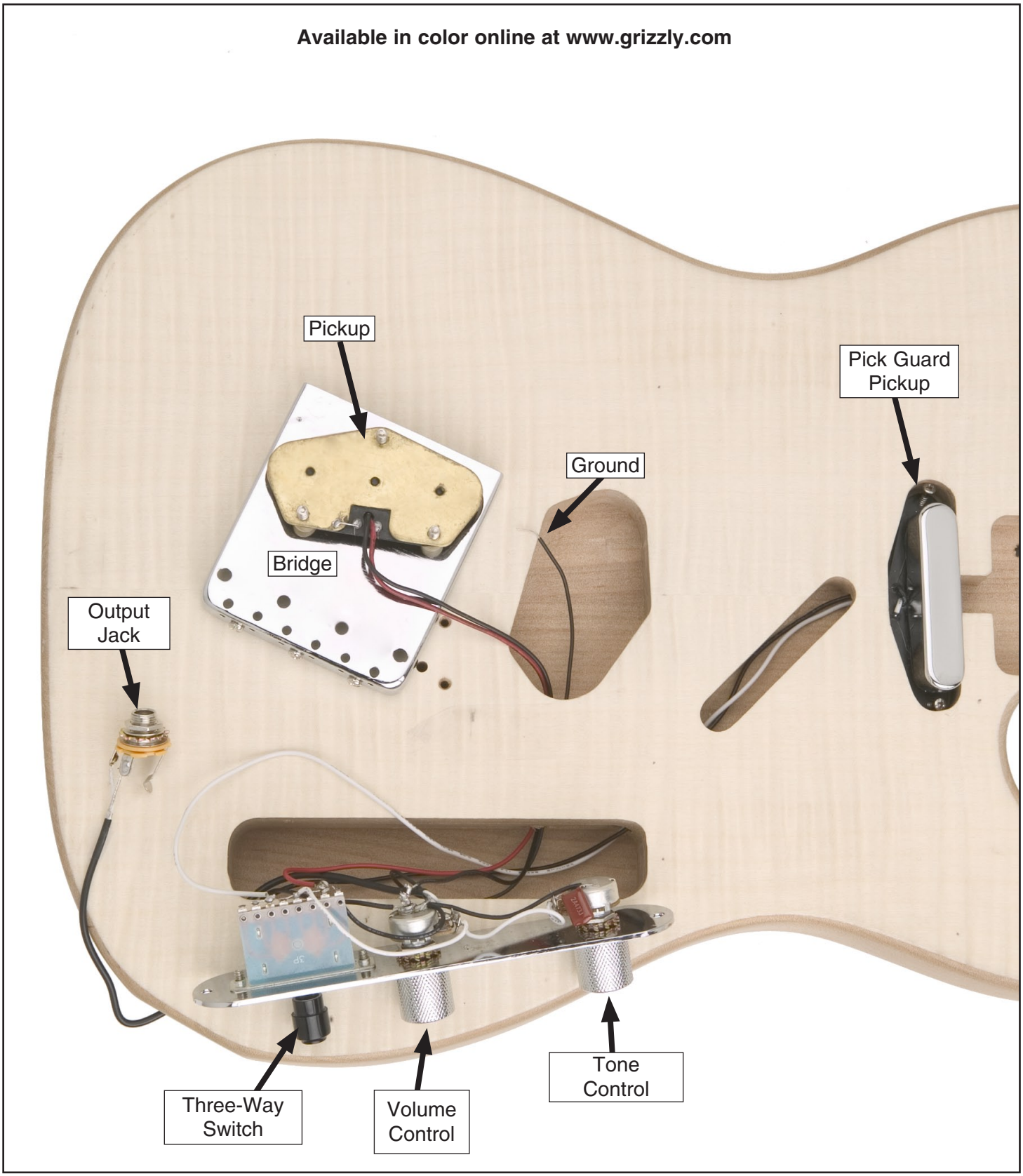


Figure 52. Model H8070 overall wiring.

Wiring Diagram

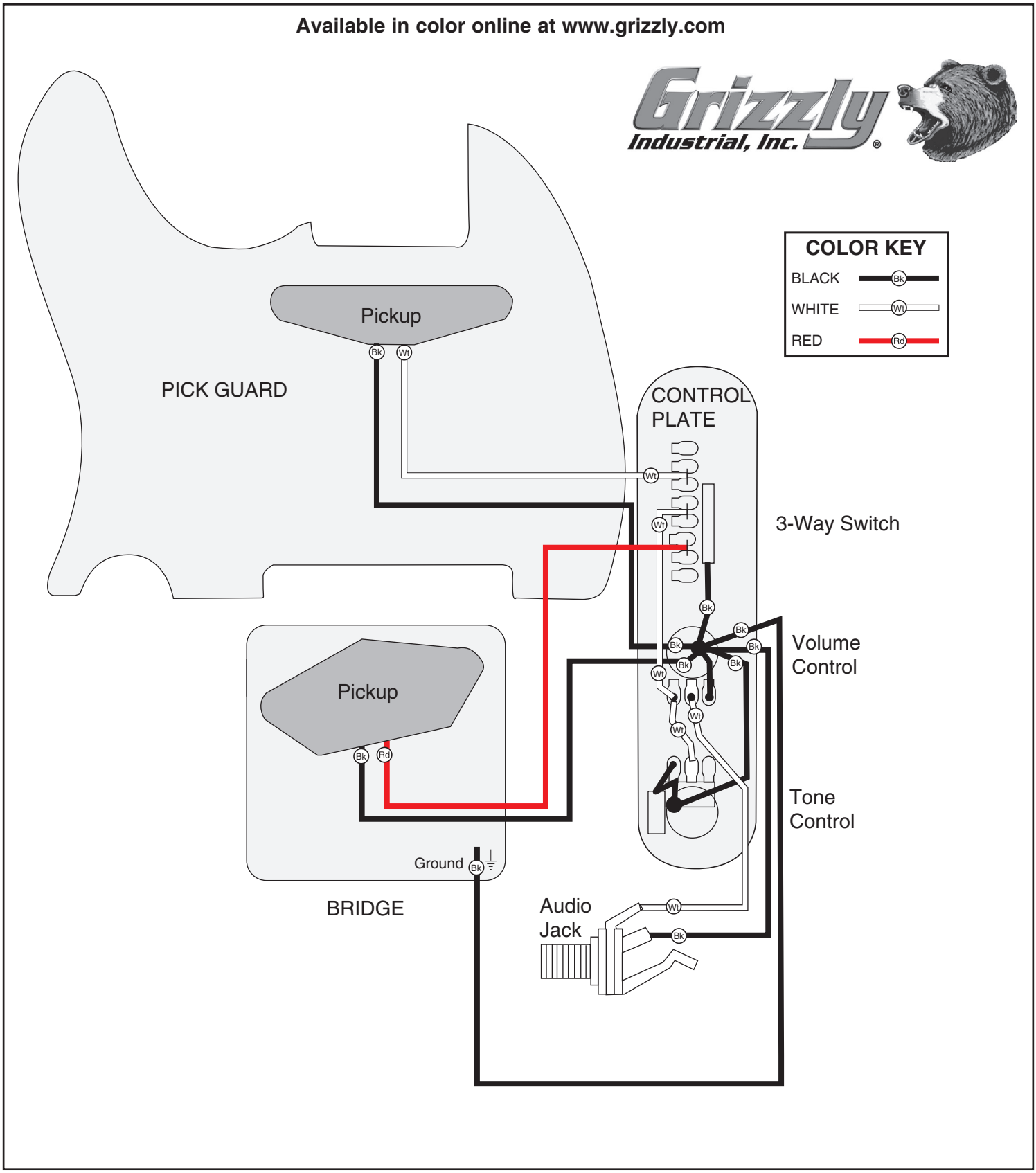


Figure 53. Model H8070 wiring diagram.

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____ Yes _____ No

8. Would you recommend Grizzly Industrial to a friend? _____ Yes _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____ Yes _____ No

10. Comments: _____

_____

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